



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200  
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**D135-751-011**  
**Job Sheet 188348**



**Part No:** D135-751-011

**Job Qty:** 1 ea

**Part Name:** Skidtube with Standard Wearplates Fits LH or RH



**Part Weight:** 0 lbs

**Status:** New

**Priority:** Medium

**Job Created:** 1/8/19

**Job Tracking No:**

**Due Date:** 2/22/19

**Created By:** Jesse White

**Type:** Stock

**Description:**

**Note:** DWG DSI 9661 REV A, D3507 REV D IPP Rev:A 44353 New Issue JLM IPP Rev:B 06-12-18 As per Rev B JLM IPP Rev:C 07-12-11 ECN 1036 as per revB DD IPP Rev D 08.11.04 Added DT9431 to sequence 5 EC verf DD IPP Rev E 10.02.22 per PAR 09-043 EC verified: DD IPP Rev:F 10.06.09 remove seq110 DD verf:EC IPP Rev G 10.09.17 added D3507-1-bent EC verified:DD IPP REV:H 13.12.11 ECN13-619/ CHG002 DD VERF:JLM

**Ship Via:**

### Bill of Materials



**Container No:** S147941



**Part:** D135-751-011

**Job No:** 188348

**Serial No/Batch:** S147941

**Revision:**

**Inspector:**

**Exp Date:**

**Instructions:** FAA STC SR01709SE 15/10/28, TC LoA RDIMS

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Hawkesbury, ON K6A 1K7  
CANADA  
TEL: 1 613 632-5200  
Email: sales@dartaero.com  
www.dartaerospace.com

Entered: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. \_\_\_\_\_

Route update only ☐

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| Job: _____<br><br>Part No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                          | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/> |                                            | <b>DEPARTMENT/PROCESS</b><br><br><table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Cross tube <input type="checkbox"/></td> <td>Eng. (Non-AW) <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Supplier Quality <input type="checkbox"/></td> </tr> </table> |                          |               |                          |                        |                          | Skid-tube <input type="checkbox"/> | Cross tube <input type="checkbox"/> | Eng. (Non-AW) <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Large Fab <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Supplier Quality <input type="checkbox"/> |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |
| Skid-tube <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Cross tube <input type="checkbox"/>                      | Eng. (Non-AW) <input type="checkbox"/>                                                                                            | Engineering <input type="checkbox"/>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |               |                          |                        |                          |                                    |                                     |                                        |                                      |                                    |                                    |                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                           |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |
| Machining <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Small Fab <input type="checkbox"/>                       | Prod. Eng. Coord. <input type="checkbox"/>                                                                                        | Water Jet <input type="checkbox"/>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |               |                          |                        |                          |                                    |                                     |                                        |                                      |                                    |                                    |                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                           |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |
| Large Fab <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Finishing <input type="checkbox"/>                       | Rec/Store/Packaging <input type="checkbox"/>                                                                                      | Supplier Quality <input type="checkbox"/>  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |               |                          |                        |                          |                                    |                                     |                                        |                                      |                                    |                                    |                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                           |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                          | Sequence #:                                                                                                                       |                                            | QTY Affected :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                          |               | MRB (QSI042)             |                        |                          |                                    |                                     |                                        |                                      |                                    |                                    |                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                           |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                          |                                                                                                                                   |                                            | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |               |                          | Completed By           |                          |                                    |                                     |                                        |                                      |                                    |                                    |                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                           |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                          |                                                                                                                                   |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |               |                          | QC / QA Coordinator    |                          |                                    |                                     |                                        |                                      |                                    |                                    |                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                           |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |
| <b>Root Cause</b><br><br><table style="width:100%;"> <tr><td>Operator</td><td><input type="checkbox"/></td></tr> <tr><td>Manufacturing Process</td><td><input type="checkbox"/></td></tr> <tr><td>Equip/Tooling</td><td><input type="checkbox"/></td></tr> <tr><td>Handling/Preservation</td><td><input type="checkbox"/></td></tr> <tr><td>Material</td><td><input type="checkbox"/></td></tr> <tr><td>Product Improvement</td><td><input type="checkbox"/></td></tr> <tr><td>Process Improvement</td><td><input type="checkbox"/></td></tr> <tr><td>Human Factors</td><td><input type="checkbox"/></td></tr> </table> |                                                          | Operator                                                                                                                          | <input type="checkbox"/>                   | Manufacturing Process                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <input type="checkbox"/> | Equip/Tooling | <input type="checkbox"/> | Handling/Preservation  | <input type="checkbox"/> | Material                           | <input type="checkbox"/>            | Product Improvement                    | <input type="checkbox"/>             | Process Improvement                | <input type="checkbox"/>           | Human Factors                              | <input type="checkbox"/>           | <b>FAULT CATEGORY</b><br><br><table style="width:100%;"> <tr> <td><input type="checkbox"/> Pressure/Forced</td> <td><input type="checkbox"/> Contamination</td> <td><input type="checkbox"/> Power Loss/Surge</td> <td><input type="checkbox"/> Positioned Wrong</td> </tr> <tr> <td><input type="checkbox"/> Bending</td> <td><input type="checkbox"/> Misaligned/off center</td> <td><input type="checkbox"/> Folio/Program</td> <td><input type="checkbox"/> Outside Tolerance</td> </tr> <tr> <td><input type="checkbox"/> Crushing</td> <td><input type="checkbox"/> BOM/Route</td> <td><input type="checkbox"/> Grain Direction</td> <td><input type="checkbox"/> Drawing</td> </tr> <tr> <td><input type="checkbox"/> Cracks</td> <td><input type="checkbox"/> Broken/Damage/Defect</td> <td><input type="checkbox"/> Weld</td> <td><input type="checkbox"/> Finish</td> </tr> <tr> <td><input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist</td> <td><input type="checkbox"/> Incomplete/Unclear Instructions</td> <td><input type="checkbox"/> Wrong Stock Pulled</td> <td><input type="checkbox"/> Part Lost/Missing</td> </tr> <tr> <td><input type="checkbox"/> Marks/Chatter</td> <td><input type="checkbox"/> Drill Holes</td> <td><input type="checkbox"/> Out of Sequence</td> <td><input type="checkbox"/> Misread</td> </tr> <tr> <td><input type="checkbox"/> Mislabeled</td> <td><input type="checkbox"/> Fit/Function</td> <td><input type="checkbox"/> Off-set/Set-up</td> <td></td> </tr> </table> |                                    |                                              |                                           |  |  | <input type="checkbox"/> Pressure/Forced | <input type="checkbox"/> Contamination | <input type="checkbox"/> Power Loss/Surge | <input type="checkbox"/> Positioned Wrong | <input type="checkbox"/> Bending | <input type="checkbox"/> Misaligned/off center | <input type="checkbox"/> Folio/Program | <input type="checkbox"/> Outside Tolerance | <input type="checkbox"/> Crushing | <input type="checkbox"/> BOM/Route | <input type="checkbox"/> Grain Direction | <input type="checkbox"/> Drawing | <input type="checkbox"/> Cracks | <input type="checkbox"/> Broken/Damage/Defect | <input type="checkbox"/> Weld | <input type="checkbox"/> Finish | <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist | <input type="checkbox"/> Incomplete/Unclear Instructions | <input type="checkbox"/> Wrong Stock Pulled | <input type="checkbox"/> Part Lost/Missing | <input type="checkbox"/> Marks/Chatter | <input type="checkbox"/> Drill Holes | <input type="checkbox"/> Out of Sequence | <input type="checkbox"/> Misread | <input type="checkbox"/> Mislabeled | <input type="checkbox"/> Fit/Function | <input type="checkbox"/> Off-set/Set-up |  |
| Operator                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <input type="checkbox"/>                                 |                                                                                                                                   |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |               |                          |                        |                          |                                    |                                     |                                        |                                      |                                    |                                    |                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                           |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |
| Manufacturing Process                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <input type="checkbox"/>                                 |                                                                                                                                   |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |               |                          |                        |                          |                                    |                                     |                                        |                                      |                                    |                                    |                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                           |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |
| Equip/Tooling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <input type="checkbox"/>                                 |                                                                                                                                   |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |               |                          |                        |                          |                                    |                                     |                                        |                                      |                                    |                                    |                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                           |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |
| Handling/Preservation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <input type="checkbox"/>                                 |                                                                                                                                   |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |               |                          |                        |                          |                                    |                                     |                                        |                                      |                                    |                                    |                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                           |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |
| Material                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <input type="checkbox"/>                                 |                                                                                                                                   |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |               |                          |                        |                          |                                    |                                     |                                        |                                      |                                    |                                    |                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                           |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |
| Product Improvement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <input type="checkbox"/>                                 |                                                                                                                                   |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |               |                          |                        |                          |                                    |                                     |                                        |                                      |                                    |                                    |                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                           |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |
| Process Improvement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <input type="checkbox"/>                                 |                                                                                                                                   |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |               |                          |                        |                          |                                    |                                     |                                        |                                      |                                    |                                    |                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                           |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |
| Human Factors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <input type="checkbox"/>                                 |                                                                                                                                   |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |               |                          |                        |                          |                                    |                                     |                                        |                                      |                                    |                                    |                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                           |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |
| <input type="checkbox"/> Pressure/Forced                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <input type="checkbox"/> Contamination                   | <input type="checkbox"/> Power Loss/Surge                                                                                         | <input type="checkbox"/> Positioned Wrong  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |               |                          |                        |                          |                                    |                                     |                                        |                                      |                                    |                                    |                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                           |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |
| <input type="checkbox"/> Bending                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <input type="checkbox"/> Misaligned/off center           | <input type="checkbox"/> Folio/Program                                                                                            | <input type="checkbox"/> Outside Tolerance |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |               |                          |                        |                          |                                    |                                     |                                        |                                      |                                    |                                    |                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                           |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |
| <input type="checkbox"/> Crushing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <input type="checkbox"/> BOM/Route                       | <input type="checkbox"/> Grain Direction                                                                                          | <input type="checkbox"/> Drawing           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |               |                          |                        |                          |                                    |                                     |                                        |                                      |                                    |                                    |                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                           |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |
| <input type="checkbox"/> Cracks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <input type="checkbox"/> Broken/Damage/Defect            | <input type="checkbox"/> Weld                                                                                                     | <input type="checkbox"/> Finish            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |               |                          |                        |                          |                                    |                                     |                                        |                                      |                                    |                                    |                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                           |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |
| <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <input type="checkbox"/> Incomplete/Unclear Instructions | <input type="checkbox"/> Wrong Stock Pulled                                                                                       | <input type="checkbox"/> Part Lost/Missing |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |               |                          |                        |                          |                                    |                                     |                                        |                                      |                                    |                                    |                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                           |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |
| <input type="checkbox"/> Marks/Chatter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <input type="checkbox"/> Drill Holes                     | <input type="checkbox"/> Out of Sequence                                                                                          | <input type="checkbox"/> Misread           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |               |                          |                        |                          |                                    |                                     |                                        |                                      |                                    |                                    |                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                           |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |
| <input type="checkbox"/> Mislabeled                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <input type="checkbox"/> Fit/Function                    | <input type="checkbox"/> Off-set/Set-up                                                                                           |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |               |                          |                        |                          |                                    |                                     |                                        |                                      |                                    |                                    |                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                           |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                          |                                                                                                                                   |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |               |                          | Other/Details:         |                          |                                    |                                     |                                        |                                      |                                    |                                    |                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                           |  |  |                                          |                                        |                                           |                                           |                                  |                                                |                                        |                                            |                                   |                                    |                                          |                                  |                                 |                                               |                               |                                 |                                                       |                                                          |                                             |                                            |                                        |                                      |                                          |                                  |                                     |                                       |                                         |  |



| Job Routing |                    |       |            |          |           |         |                       |           |                       |
|-------------|--------------------|-------|------------|----------|-----------|---------|-----------------------|-----------|-----------------------|
| Op No       | Operation          | Qty   | Start Date | Due Date | Standard  |         | Workcenter/Supplier   |           | Sign-off              |
|             |                    |       |            |          | Setup Hrs | Run Hrs | Workcenter / Supplier | Lead Time |                       |
| 90          | Start up Operation | 1 Ea  |            | 2/22/19  | 0.00      | 0.00    | Start Up Skidtubes-1  |           | JH                    |
| 120         | Skidtubes          | 1 pcs |            | 2/22/19  | 0.00      | 0.80    | Skidtubes-1           |           | JH                    |
| 140         | QC                 | 1 pcs |            | 2/22/19  | 0.00      | 0.00    | QC5                   |           | D 19-02-01            |
| 150         | HandFinish         | 1 pcs |            | 2/22/19  | 0.00      | 0.33    | HandFinish1           |           | JH 19-02-06           |
| 160         | QC                 | 1 pcs |            | 2/22/19  | 0.00      | 0.00    | QC7-1                 |           | BE                    |
| 170         | Skidtubes          | 1 pcs |            | 2/22/19  | 0.00      | 1.00    | Skidtubes-1           |           | FE BE                 |
| 180         | QC                 | 1 pcs |            | 2/22/19  | 0.00      | 0.00    | QC10                  |           | D 19-02-08            |
| 185         | HandFinish         | 1 pcs |            | 2/22/19  | 0.00      | 0.10    | HandFinish6           |           | JH 19-2-06            |
| 187         | QC                 | 1 pcs |            | 2/22/19  | 0.00      | 0.00    | QC7-1                 |           | BE                    |
| 190         | Skidtubes          | 1 pcs |            | 2/22/19  | 0.00      | 0.77    | Skidtubes-1           |           | BE                    |
| 200         | QC                 | 1 pcs |            | 2/22/19  | 0.00      | 0.00    | QC5                   |           | D 19-02-14            |
| 210         | HandFinish         | 1 pcs |            | 2/22/19  | 0.00      | 0.08    | HandFinish2           |           | D 19-2-15             |
| 215         | Outsource          | 1 pcs |            | 2/22/19  |           |         | ATE003-VC             | 5         |                       |
| 220         | SprayPaint         | 1 pcs |            | 2/22/19  | 0.00      | 0.25    | Spray Paint           |           | R.D. 19-2-19          |
| 230         | QC                 | 1 pcs |            | 2/22/19  | 0.00      | 0.00    | QC14                  |           | JH 19-2-21            |
| 260         | HandFinish         | 1 pcs |            | 2/22/19  | 0.00      | 0.74    | HandFinish4           |           | JH 19-2-21            |
| 270         | QC                 | 1 pcs |            | 2/22/19  | 0.00      | 0.00    | QC5                   |           | D 19-02-22            |
| 280         | Packaging          | 1 pcs |            | 2/22/19  | 0.00      | 0.00    | Packaging1-1          |           | 6107 25 FEB 2019      |
| 290         | QC                 | 1 pcs |            | 2/22/19  | 0.00      | 0.00    | QC4                   |           | DAS 21 FEB 2 5 2019   |
| 300         | Packaging          | 1 pcs |            | 2/22/19  | 0.00      | 0.00    | Packaging3-1          |           | 21 FEB 2 5 2019       |
| 305         | DC                 | 1 pcs |            | 2/22/19  | 0.00      | 0.00    | DC                    |           | DAS 9-89 FEB 2 6 2019 |
| 310         | QC21-FG            | 1 Ea  |            | 2/22/19  | 0.00      | 0.00    | QC21                  |           | 21 FEB 2 6 2019       |

Part Op 120 - 1-Cut Aft end as per dwg D3507 3-Drill Aft & Fwd Cap holes using DT8678 & DT8901 4-Locate DT8870 & Drill Descriptions: Ground wire hole on top of Tube. 6-Locate DT8870 with #30 cleco in Ground wire hole ,then Pilot Drill all X-Bolt holes using #30" drill. \*\*\*\*DO NOT OPEN AFT CAP HOLES\*\*\*\*\* 7-Open crossbolt holes to 0.3125" (3 per side). Drill pilot holes for wearplates using Dt8868, Use DT8892 FOR REAR WEARPLATE HOLES. 8-Open six rear wearplate holes using DT8892. Open all wearplate holes to 0.297" 9-Open ground wire hole .297" section E-E 10-Open Aft & Fwd Cap holes using .208" drill. 11-Bore out aft end of tube as per Dwg D3507 & Detail "B". 12- Section G-G holes must be laid out manually, open to #30. 13-Deburr holes.

170 - 1-Open X-Bolt holes to .375" (1 Places) & .500" (2 Places) as per Dwg D3507. and section G-G to .750" (2 places) 2-Counter Sink X-BOLT holes as per Dwg D3507 3-Deburr and blow out chips from inside of tube. 4-Bond web as per Dwg D3507 & QSI 015 start time: 1:35pm end time: 1:55pm 5-Weld x-bolt spacers as per Dwg D3507 and Detail C-C & D-D and G-G 7-Drill Rivet Holes as per Dwg D3507 Using Dt8871A&B 8-Deburr Rivet holes.

185 - RE-ALODINE ONLY

190 - 1-Rivet D3506-1/-3 as per Dwg D3507.

210 - Touch-up alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

220 - 1- Apply Primer as per QSI 005 4.2.1.3.3 and dwg A/R Primer Batch: 5152590 2- Paint two coats of White paint as per QSI 005 4.2 and dwg A/R Paint Batch: 5146086

260 - 1- Install Wearplate & Ground Wire inserts as per Dwg D3507. 1-Inspect for Foreign objects 2-Install Fwd & Aft caps as per Dwg D3507 And Detail "A" & "B" 3-Install Wearplates as per Dwg D3507 , Note: Install (1) Bolt and (1) washer on Ground Wire insert on top of tube Do not Install Screws where indicated on Dwg (Note #6) 4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube 5- Wing Walk as per Dwg D3507 and QSI 005 4.4 Batch: 54134240

300 - Identify and pack for shipping as per PPP D135-751-011 PPP Rev:

305 - Photocopy bluefile & type labels per PPP D135-751-011 CHG002

DAS  
15  
9-89

AK  
136158



Entered: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. \_\_\_\_\_

Route update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                        |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------|--|
| Job: _____<br><br>Part No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/> | <b>DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/> </div> <div>           Eng. (Non-AW) <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Water Jet <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Quality <input type="checkbox"/> </div> </div>                                                                                                                                                                                                                                                                      |  |                        |  |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Sequence #:                                                                                                                       | QTY Affected :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | MRB (QSI042)           |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                   | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | Completed By           |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | Lead hand / Supervisor |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | QC / QA Coordinator    |  |
| <b>Root Cause</b><br><br><div style="display: flex;"> <div style="flex: 1;">           Operator <input type="checkbox"/><br/>           Manufacturing Process <input type="checkbox"/><br/>           Equip/Tooling <input type="checkbox"/><br/>           Handling/Presservation <input type="checkbox"/><br/>           Material <input type="checkbox"/><br/>           Product Improvement <input type="checkbox"/><br/>           Process Improvement <input type="checkbox"/><br/>           Human Factors <input type="checkbox"/> </div> <div style="flex: 1;"> <input type="checkbox"/> Pressure/Forced<br/> <input type="checkbox"/> Bending<br/> <input type="checkbox"/> Crushing<br/> <input type="checkbox"/> Cracks<br/> <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist<br/> <input type="checkbox"/> Marks/Chatter<br/> <input type="checkbox"/> Mislabeled         </div> </div> |                                                                                                                                   | <b>FAULT CATEGORY</b><br><br><div style="display: flex;"> <div style="flex: 1;"> <input type="checkbox"/> Contamination<br/> <input type="checkbox"/> Misaligned/off center<br/> <input type="checkbox"/> BOM/Route<br/> <input type="checkbox"/> Broken/Damage/Defect<br/> <input type="checkbox"/> Incomplete/Unclear Instructions<br/> <input type="checkbox"/> Drill Holes<br/> <input type="checkbox"/> Fit/Function         </div> <div style="flex: 1;"> <input type="checkbox"/> Power Loss/Surge<br/> <input type="checkbox"/> Folio/Program<br/> <input type="checkbox"/> Grain Direction<br/> <input type="checkbox"/> Weld<br/> <input type="checkbox"/> Wrong Stock Pulled<br/> <input type="checkbox"/> Out of Sequence<br/> <input type="checkbox"/> Off-set/Set-up         </div> <div style="flex: 1;"> <input type="checkbox"/> Positioned Wrong<br/> <input type="checkbox"/> Outside Tolerance<br/> <input type="checkbox"/> Drawing<br/> <input type="checkbox"/> Finish<br/> <input type="checkbox"/> Part Lost/Missing<br/> <input type="checkbox"/> Misread         </div> </div> |  |                        |  |
| Other/Details:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                        |  |



| Job BOM       |                         |               |                       |           | 008254 |
|---------------|-------------------------|---------------|-----------------------|-----------|--------|
| Part / Item   | Component Name          | Quantity      | Operation             | Container |        |
| D3507-1-BENT  | Skidtube Assembly EC135 | 1 pcs (1 ea)  | 90-Start up Operation | 5145108   |        |
| D3504-1       | Crossbolt Spacer        | 2 pcs (2 ea)  | 170-Skidtubes         | 5146029   |        |
| D3504-3       | Crossbolt Spacer        | 1 pcs (1 ea)  | 170-Skidtubes         | 5105604   |        |
| D3504-5       | Crossbolt Spacer        | 2 pcs (2 ea)  | 170-Skidtubes         | 5091959   |        |
| D3505-1       | Web                     | 1 pcs (1 ea)  | 170-Skidtubes         | 514185    |        |
| D3506-1       | Doubler                 | 4 pcs (4 ea)  | 190-Skidtubes         | 5083322   |        |
| D3506-3       | Doubler                 | 2 pcs (2 ea)  | 190-Skidtubes         | 5091971   |        |
| MS20601-AD4W3 | Rivet                   | 12 Ea (12 ea) | 190-Skidtubes         | 5147507   |        |
| ALS4-1032-225 | Rivnut                  | 1 Ea (1 ea)   | 260-HandFinish        | 5058135   |        |
| ALS7-1032-130 | Rivnut                  | 38 Ea (38 ea) | 260-HandFinish        | 5135096   |        |
| AN3C4A        | Bolt                    | 31 Ea (31 ea) | 260-HandFinish        | 5152638   |        |
| AN3C5A        | Bolt                    | 2 Ea (2 ea)   | 260-HandFinish        | 5075999   |        |
| AN526C1032R10 | Screw                   | 2 Ea (2 ea)   | 260-HandFinish        | 5071664-3 |        |
| D2965         | Cap                     | 1 pcs (1 ea)  | 260-HandFinish        | 5055482   |        |
| D2965-3       | Cap                     | 1 pcs (1 ea)  | 260-HandFinish        | 5126369   |        |
| D3492-1       | Plug                    | 4 pcs (4 ea)  | 260-HandFinish        | 5138108   |        |
| D3492-3       | Plug                    | 4 pcs (4 ea)  | 260-HandFinish        | 5139512   |        |
| D3492-7       | Plug                    | 2 pcs (2 ea)  | 260-HandFinish        | 5148611   |        |
| D4918-047     | Wearplate Aft           | 1 pcs (1 ea)  | 260-HandFinish        | 5143300   |        |
| D4918-1       | Wearplate Fwd           | 1 pcs (1 ea)  | 260-HandFinish        | 5148278   |        |
| D4918-3       | Wearplate Center Fwd    | 1 pcs (1 ea)  | 260-HandFinish        | 5097992   |        |
| D4918-5       | Wearplate Center Aft    | 1 pcs (1 ea)  | 260-HandFinish        | 5120745   |        |
| NAS1149C0332R | Washer                  | 33 Ea (33 ea) | 260-HandFinish        | 5140511   |        |
| NAS1611-007   | O-Ring                  | 2 Ea (2 ea)   | 260-HandFinish        | 5103697   |        |
| NAS1611-010   | O-Ring                  | 4 Ea (4 ea)   | 260-HandFinish        | 5106702   |        |
| NAS1611-013   | O-Ring                  | 4 Ea (4 ea)   | 260-HandFinish        | 5106740   |        |
| AN3C4A        | Bolt                    | 8 Ea (8 ea)   | 280-Packaging         | 5090030   |        |
| D3512-041     | Wearplate               | 2 Ea (2 ea)   | 280-Packaging         | 5151155   |        |
| NAS1149C0332R | Washer                  | 8 Ea (8 ea)   | 280-Packaging         | 5143145   |        |

| Job Allocations       |                |          |           |           |
|-----------------------|----------------|----------|-----------|-----------|
| Operation             | Component Part | Required | Inventory | Allocated |
| 90-Start up Operation | D3507-1-BENT   | 1        | 2         | 0         |
| 170-Skidtubes         | D3504-1        | 2        | 4         | 0         |
|                       | D3504-3        | 1        | 14        | 0         |
|                       | D3504-5        | 2        | 30        | 0         |
|                       | D3505-1        | 1        | 12        | 0         |
| 190-Skidtubes         | D3506-1        | 4        | 33        | 0         |
|                       | D3506-3        | 2        | 18        | 0         |
|                       | MS20601-AD4W3  | 12       | 487       | 0         |
| 260-HandFinish        | ALS4-1032-225  | 1        | 981       | 0         |
|                       | ALS7-1032-130  | 38       | 1,536     | 0         |
|                       | AN3C4A         | 31       | 1,045     | 0         |
|                       | AN3C5A         | 2        | 1,249     | 0         |
|                       | AN526C1032R10  | 2        | 87        | 0         |
|                       | D2965          | 1        | 43        | 0         |
|                       | D2965-3        | 1        | 16        | 0         |
|                       | D3492-1        | 4        | 77        | 0         |
|                       | D3492-3        | 4        | 136       | 0         |
|                       | D3492-7        | 2        | 8         | 0         |
|                       | D4918-047      | 1        | 5         | 0         |
|                       | D4918-1        | 1        | 5         | 0         |
|                       | D4918-3        | 1        | 8         | 0         |
|                       | D4918-5        | 1        | 7         | 0         |
|                       | NAS1149C0332R  | 33       | 2,982     | 0         |
|                       | NAS1611-007    | 2        | 258       | 0         |
|                       | NAS1611-010    | 4        | 511       | 0         |
|                       | NAS1611-013    | 4        | 172       | 0         |
| 280-Packaging         | AN3C4A         | 8        | 1,045     | 0         |
|                       | D3512-041      | 2        | 11        | 0         |
|                       | NAS1149C0332R  | 8        | 2,982     | 0         |



Entered: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. \_\_\_\_\_

Route update only ☐

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------|--|
| Job: _____<br><br>Part No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/> | <b>DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/> </div> <div>           Eng. (Non-AW) <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Water Jet <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Quality <input type="checkbox"/> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                        |  |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Sequence #:                                                                                                                       | QTY Affected :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | MRB (QSI042)           |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                   | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | Completed By           |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | Lead hand / Supervisor |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | QC / QA Coordinator    |  |
| <b>Root Cause</b><br><br><div style="display: flex; flex-direction: column; align-items: flex-start;"> <div>Operator <input type="checkbox"/></div> <div>Manufacturing Process <input type="checkbox"/></div> <div>Equip/Tooling <input type="checkbox"/></div> <div>Handling/Presservation <input type="checkbox"/></div> <div>Material <input type="checkbox"/></div> <div>Product Improvement <input type="checkbox"/></div> <div>Process Improvement <input type="checkbox"/></div> <div>Human Factors <input type="checkbox"/></div> </div> |                                                                                                                                   | <b>FAULT CATEGORY</b><br><br><div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Pressure/Forced<br/> <input type="checkbox"/> Bending<br/> <input type="checkbox"/> Crushing<br/> <input type="checkbox"/> Cracks<br/> <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist<br/> <input type="checkbox"/> Marks/Chatter<br/> <input type="checkbox"/> Mislabeled         </div> <div style="width: 50%;"> <input type="checkbox"/> Contamination<br/> <input type="checkbox"/> Misaligned/off center<br/> <input type="checkbox"/> BOM/Route<br/> <input type="checkbox"/> Broken/Damage/Defect<br/> <input type="checkbox"/> Incomplete/Unclear Instructions<br/> <input type="checkbox"/> Drill Holes<br/> <input type="checkbox"/> Fit/Function         </div> <div style="width: 50%;"> <input type="checkbox"/> Power Loss/Surge<br/> <input type="checkbox"/> Folio/Program<br/> <input type="checkbox"/> Grain Direction<br/> <input type="checkbox"/> Weld<br/> <input type="checkbox"/> Wrong Stock Pulled<br/> <input type="checkbox"/> Out of Sequence<br/> <input type="checkbox"/> Off-set/Set-up         </div> <div style="width: 50%;"> <input type="checkbox"/> Positioned Wrong<br/> <input type="checkbox"/> Outside Tolerance<br/> <input type="checkbox"/> Drawing<br/> <input type="checkbox"/> Finish<br/> <input type="checkbox"/> Part Lost/Missing<br/> <input type="checkbox"/> Misread         </div> </div> |  |                        |  |
| Other/Details:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |

|                                    |
|------------------------------------|
| <b>Part Specifications</b>         |
| Specifications could not be found. |

Plex 1/8/19 1:39 PM dart.white.jesse

Entered: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. \_\_\_\_\_

Route update only ☐

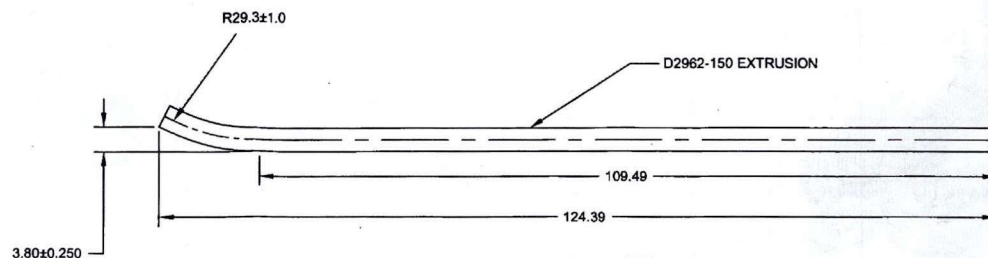
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| Job: _____<br><br>Part No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/> | <b>DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/> </div> <div>           Eng. (Non-AW) <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Water Jet <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Quality <input type="checkbox"/> </div> </div>                                                                                                                                                                                                                                                                      |  |                        |  |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Sequence #:                                                                                                                       | QTY Affected :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | MRB (QSI042)           |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                   | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | Completed By           |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | Lead hand / Supervisor |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                        |  |
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| <b>Root Cause</b><br><br><div style="display: flex;"> <div style="flex: 1;">           Operator <input type="checkbox"/><br/>           Manufacturing Process <input type="checkbox"/><br/>           Equip/Tooling <input type="checkbox"/><br/>           Handling/Presservation <input type="checkbox"/><br/>           Material <input type="checkbox"/><br/>           Product Improvement <input type="checkbox"/><br/>           Process Improvement <input type="checkbox"/><br/>           Human Factors <input type="checkbox"/> </div> <div style="flex: 1;"> <input type="checkbox"/> Pressure/Forced<br/> <input type="checkbox"/> Bending<br/> <input type="checkbox"/> Crushing<br/> <input type="checkbox"/> Cracks<br/> <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist<br/> <input type="checkbox"/> Marks/Chatter<br/> <input type="checkbox"/> Mislabeled         </div> </div> |                                                                                                                                   | <b>FAULT CATEGORY</b><br><br><div style="display: flex;"> <div style="flex: 1;"> <input type="checkbox"/> Contamination<br/> <input type="checkbox"/> Misaligned/off center<br/> <input type="checkbox"/> BOM/Route<br/> <input type="checkbox"/> Broken/Damage/Defect<br/> <input type="checkbox"/> Incomplete/Unclear Instructions<br/> <input type="checkbox"/> Drill Holes<br/> <input type="checkbox"/> Fit/Function         </div> <div style="flex: 1;"> <input type="checkbox"/> Power Loss/Surge<br/> <input type="checkbox"/> Folio/Program<br/> <input type="checkbox"/> Grain Direction<br/> <input type="checkbox"/> Weld<br/> <input type="checkbox"/> Wrong Stock Pulled<br/> <input type="checkbox"/> Out of Sequence<br/> <input type="checkbox"/> Off-set/Set-up         </div> <div style="flex: 1;"> <input type="checkbox"/> Positioned Wrong<br/> <input type="checkbox"/> Outside Tolerance<br/> <input type="checkbox"/> Drawing<br/> <input type="checkbox"/> Finish<br/> <input type="checkbox"/> Part Lost/Missing<br/> <input type="checkbox"/> Misread         </div> </div> |  |                        |  |
| Other/Details:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                        |  |



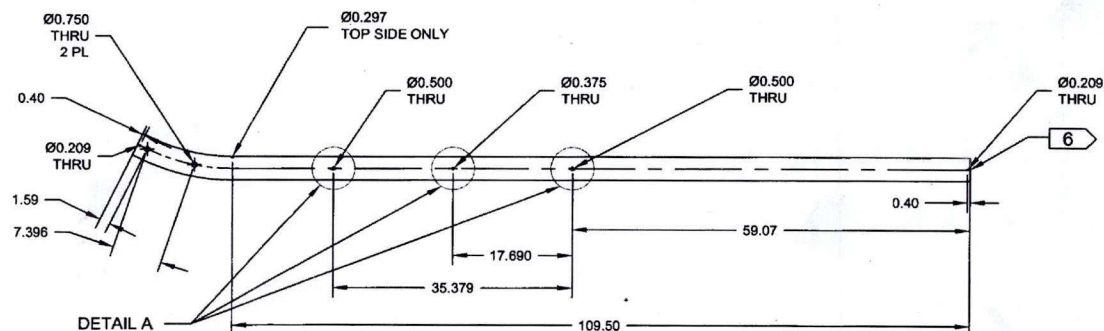
| Qty | Part Number   | Description       |
|-----|---------------|-------------------|
| X   | D3507-041     | SKIDTUBE ASSEMBLY |
| 1   | D2962-150     | EXTRUSION         |
| 1   | D2965         | CAP               |
| 1   | D2965-3       | CAP               |
| 4   | D3482-041     | PLUG ASSEMBLY     |
| 4   | D3482-043     | PLUG ASSEMBLY     |
| 2   | D3482-047     | PLUG ASSEMBLY     |
| 2   | D3504-1       | CROSS BOLT SPACER |
| 1   | D3504-3       | CROSS BOLT SPACER |
| 2   | D3504-5       | CROSS BOLT SPACER |
| 1   | D3505-1       | WEB               |
| 4   | D3506-1       | DOUBLER           |
| 2   | D3506-3       | DOUBLER           |
| 1   | D4918-1       | WEARPLATE         |
| 1   | D4918-3       | WEARPLATE         |
| 1   | D4918-5       | WEARPLATE         |
| 1   | D4918-047     | WEARPLATE         |
| 38  | AELS-1032-130 | INSERT            |
| 1   | AELS-1032-225 | INSERT            |
| 31  | AN3C4A        | BOLT              |
| 2   | AN3C5A        | BOLT              |
| 2   | AN526C1032-10 | SCREW             |
| 33  | AN960C10L     | WASHER            |
| 12  | MS20601AD4W3  | RIVET             |

# GENERAL NOTES:

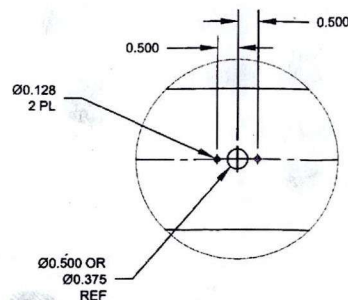
- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSERTING D3505-1 WEB.  
STANDARD: PRIME (REF. 4.2.1.3.3) AND PAINT WHITE PER DART QSI 005 4.2.  
OPTIONAL: POWDER COAT WHITE (REF 4.3.5.1) PER DART QSI 005 4.3.  
BLACK ANTI-SKID PAINT AS INDICATED TO 1.00 ABOVE CENTERLINE PER DART QSI 005 4.4 (OPTIONAL)
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) DIMENSIONS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART B/N PER DART QSI 044 6.4 (VIBRATING STYLUS) ON I.D. OF TUBE
- 7) WEIGHT: 24.1 LB (FROM IIN-D135-751)
- 8) WELDING TO BE DONE PER DART QSI 004
- 9) INSERT D3505-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/291 ADHESIVE PER DART QSI 015 AFTER BENDING
- 10) USE DART DRILL TEMPLATE DT8868 TO LOCATE AND DRILL Ø0.297 HOLES (38 PLACES) FOR WEARSHOE INSERTS. INSTALL AELS-1032-130 PER SECTION C-C (38 PLACES) AFTER FINISH. SEAL WEARPLATE BOLTS WITH SIKAFLEX-241/291.
- 11) DO NOT INSTALL AN3C4A BOLTS AND AN960C10L WASHERS IN INDICATED LOCATIONS



**D3507-1 BENDING/CUTTING DETAIL**



**D3507-1 DRILLING DETAIL**



**DETAIL A**  
TYP. 6 PL  
SCALE 3:10

|            |                                                                                                                     |                                                                                                                                                                                                                                                                                          |              |
|------------|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| D          | REMOVE D3568-X GASKETS. D4918-X WAS D3508-X<br>REVISE FINISH TO ADD PAINT AS THE<br>PREFERRED FINISH. REVISED NOTES | DW                                                                                                                                                                                                                                                                                       | 13.08.30     |
| C          | ADD D3504-5, FOR SKID GEAR DEFLECTOR;<br>CHANGE FWD CAP BOLT TO AN526C1032-10 SCREW                                 | DC                                                                                                                                                                                                                                                                                       | 07.09.19     |
| B          | ADD GASKET, CHANGE HARDWARE MAT'L                                                                                   | PH                                                                                                                                                                                                                                                                                       | 06.11.01     |
| A          | NEW ISSUE                                                                                                           | PH                                                                                                                                                                                                                                                                                       | 06.04.21     |
| REV.       | DESCRIPTION                                                                                                         | BY                                                                                                                                                                                                                                                                                       | DATE         |
| DESIGN     | DW                                                                                                                  | <b>DART AEROSPACE USA, INC</b><br>KENT, WA                                                                                                                                                                                                                                               |              |
| DRAWN      | DW                                                                                                                  |                                                                                                                                                                                                                                                                                          |              |
| CHECKED    | UP                                                                                                                  | DRAWING NO.                                                                                                                                                                                                                                                                              | REV. D       |
| MFG. APPR. | HA                                                                                                                  | D3507                                                                                                                                                                                                                                                                                    | SHEET 1 OF 2 |
| APPROVED   | MP                                                                                                                  | TITLE                                                                                                                                                                                                                                                                                    | SCALE        |
| DE APPR.   | CH                                                                                                                  | EC 135 SKIDTUBE                                                                                                                                                                                                                                                                          | NTS          |
| DATE       | 13.08.30                                                                                                            | COPYRIGHT © 2013 BY DART AEROSPACE USA, INC<br>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS<br>NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT<br>WRITTEN PERMISSION FROM DART AEROSPACE USA, INC |              |

Entered: \_\_\_\_\_ Date: \_\_\_\_\_



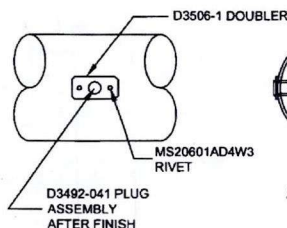
## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. \_\_\_\_\_

Route update only ☐

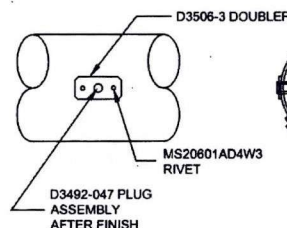
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|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------|--|
| Job: _____<br><br>Part No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/> | <b>DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/> </div> <div>           Eng. (Non-AW) <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Water Jet <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Quality <input type="checkbox"/> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                        |  |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Sequence #:                                                                                                                       | QTY Affected :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | MRB (QSI042)           |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                   | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | Completed By           |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | Lead hand / Supervisor |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | QC / QA Coordinator    |  |
| <b>Root Cause</b><br><br><div style="display: flex; flex-direction: column;"> <div>Operator <input type="checkbox"/></div> <div>Manufacturing Process <input type="checkbox"/></div> <div>Equip/Tooling <input type="checkbox"/></div> <div>Handling/Presservation <input type="checkbox"/></div> <div>Material <input type="checkbox"/></div> <div>Product Improvement <input type="checkbox"/></div> <div>Process Improvement <input type="checkbox"/></div> <div>Human Factors <input type="checkbox"/></div> </div> |                                                                                                                                   | <b>FAULT CATEGORY</b><br><br><div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Pressure/Forced<br/> <input type="checkbox"/> Bending<br/> <input type="checkbox"/> Crushing<br/> <input type="checkbox"/> Cracks<br/> <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist<br/> <input type="checkbox"/> Marks/Chatter<br/> <input type="checkbox"/> Mislabeled         </div> <div style="width: 50%;"> <input type="checkbox"/> Contamination<br/> <input type="checkbox"/> Misaligned/off center<br/> <input type="checkbox"/> BOM/Route<br/> <input type="checkbox"/> Broken/Damage/Defect<br/> <input type="checkbox"/> Incomplete/Unclear Instructions<br/> <input type="checkbox"/> Drill Holes<br/> <input type="checkbox"/> Fit/Function         </div> <div style="width: 50%;"> <input type="checkbox"/> Power Loss/Surge<br/> <input type="checkbox"/> Folio/Program<br/> <input type="checkbox"/> Grain Direction<br/> <input type="checkbox"/> Weld<br/> <input type="checkbox"/> Wrong Stock Pulled<br/> <input type="checkbox"/> Out of Sequence<br/> <input type="checkbox"/> Off-set/Set-up         </div> <div style="width: 50%;"> <input type="checkbox"/> Positioned Wrong<br/> <input type="checkbox"/> Outside Tolerance<br/> <input type="checkbox"/> Drawing<br/> <input type="checkbox"/> Finish<br/> <input type="checkbox"/> Part Lost/Missing<br/> <input type="checkbox"/> Misread         </div> </div> |  |                        |  |
| Other/Details:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |





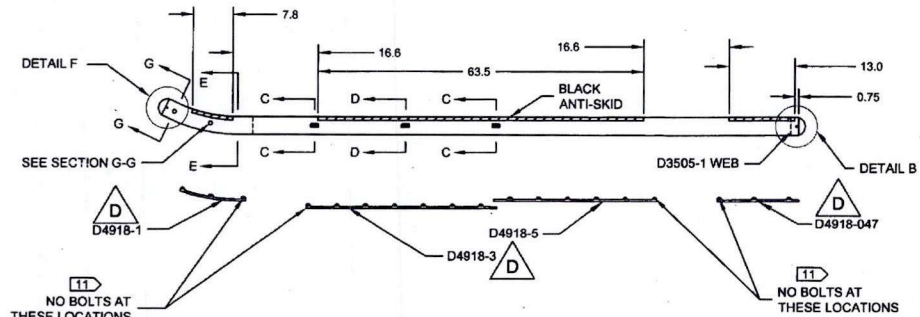
**SECTION C-C**  
(SCALE 3:10)

- AFTER BENDING AND DRILLING ASSEMBLY PERFORM THE FOLLOWING FOR Ø0.500 HOLES ONLY:
1. CHAMFER HOLE 0.030 x 45°
  2. INSERT D3504-1 CROSS BOLT SPACER 2 PL
  3. WELD INTO PLACE AND GRIND FLUSH
  4. IF REQUIRED, PASS Ø0.404 (1/8" DRILL) THRU HOLE
  5. INSTALL D3506-1 DOUBLER 4 PL USING MS20601AD4W3 RIVET 8 PL
  6. AFTER FINISH, INSTALL D3492-041 PLUG ASSEMBLY 4 PL

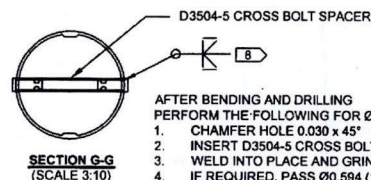
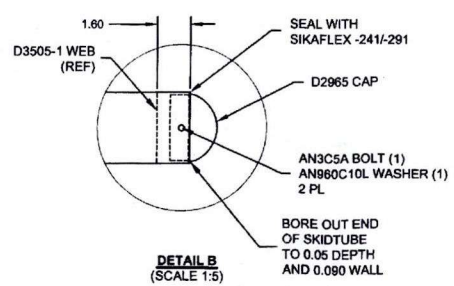
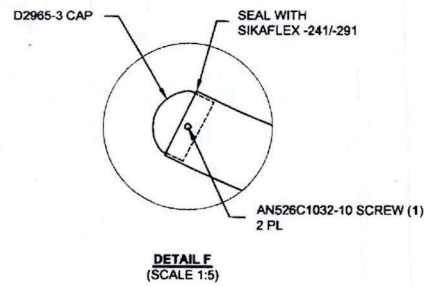


**SECTION D-D**  
(SCALE 3:10)

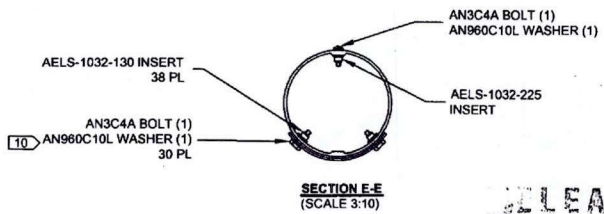
- AFTER BENDING AND DRILLING ASSEMBLY PERFORM THE FOLLOWING FOR Ø0.375 HOLES ONLY:
1. CHAMFER HOLE 0.030 x 45°
  2. INSERT D3504-3 CROSS BOLT SPACER 1 PL
  3. WELD INTO PLACE AND GRIND FLUSH
  4. IF REQUIRED, PASS Ø0.277 (1/8" DRILL) THRU HOLE
  5. INSTALL D3506-3 DOUBLER 2 PL USING MS20601AD4W3 RIVET 4 PL
  6. AFTER FINISH, INSTALL D3492-047 PLUG ASSEMBLY 2 PL



**D3507-041 ASSEMBLY DETAIL**



- AFTER BENDING AND DRILLING PERFORM THE FOLLOWING FOR Ø0.750 HOLES ONLY:
1. CHAMFER HOLE 0.030 x 45°
  2. INSERT D3504-5 CROSS BOLT SPACER 2 PL
  3. WELD INTO PLACE AND GRIND FLUSH
  4. IF REQUIRED, PASS Ø0.594 (19/32 DRILL) THRU HOLE
  5. AFTER FINISH, INSTALL D3492-043 PLUG ASSEMBLY 4 PL



|            |          |                                                                                                                                                                                                                                                                                                    |              |
|------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| DESIGN     | Dw       | <b>DART AEROSPACE USA, INC</b>                                                                                                                                                                                                                                                                     |              |
| DRAWN      | Dw       | KENT, WA                                                                                                                                                                                                                                                                                           |              |
| CHECKED    | GP       | DRAWING NO.                                                                                                                                                                                                                                                                                        | REV. D       |
| MFG. APPR. | JP       | D3507                                                                                                                                                                                                                                                                                              | SHEET 2 OF 2 |
| APPROVED   | JP       | TITLE                                                                                                                                                                                                                                                                                              | SCALE        |
| DE APPR.   | JP       | EC 135 SKIDTUBE                                                                                                                                                                                                                                                                                    | NTS          |
| DATE       | 13.08.30 | <small>COPYRIGHT © 2013 BY DART AEROSPACE USA, INC<br/>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small> |              |

RELEASED  
2013-12-10

Entered: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. \_\_\_\_\_

Route update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |                        |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------|--|
| Job: _____<br><br>Part No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/> | <b>DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/> </div> <div>           Eng. (Non-AW) <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Water Jet <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Quality <input type="checkbox"/> </div> </div>                                                                                                                                                                                                                                                   |  |                        |  |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Sequence #:                                                                                                                       | QTY Affected :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | MRB (QSI042)           |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                   | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | Completed By           |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  | Lead hand / Supervisor |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |                        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  | QC / QA Coordinator    |  |
| <b>Root Cause</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Operator <input type="checkbox"/><br/>           Manufacturing Process <input type="checkbox"/><br/>           Equip/Tooling <input type="checkbox"/><br/>           Handling/Preservation <input type="checkbox"/><br/>           Material <input type="checkbox"/><br/>           Product Improvement <input type="checkbox"/><br/>           Process Improvement <input type="checkbox"/><br/>           Human Factors <input type="checkbox"/> </div> <div> <input type="checkbox"/> Pressure/Forced<br/> <input type="checkbox"/> Bending<br/> <input type="checkbox"/> Crushing<br/> <input type="checkbox"/> Cracks<br/> <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist<br/> <input type="checkbox"/> Marks/Chatter<br/> <input type="checkbox"/> Mislabeled         </div> </div> |                                                                                                                                   | <b>FAULT CATEGORY</b><br><br><div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Contamination<br/> <input type="checkbox"/> Misaligned/off center<br/> <input type="checkbox"/> BOM/Route<br/> <input type="checkbox"/> Broken/Damage/Defect<br/> <input type="checkbox"/> Incomplete/Unclear Instructions<br/> <input type="checkbox"/> Drill Holes<br/> <input type="checkbox"/> Fit/Function         </div> <div> <input type="checkbox"/> Power Loss/Surge<br/> <input type="checkbox"/> Folio/Program<br/> <input type="checkbox"/> Grain Direction<br/> <input type="checkbox"/> Weld<br/> <input type="checkbox"/> Wrong Stock Pulled<br/> <input type="checkbox"/> Out of Sequence<br/> <input type="checkbox"/> Off-set/Set-up         </div> <div> <input type="checkbox"/> Positioned Wrong<br/> <input type="checkbox"/> Outside Tolerance<br/> <input type="checkbox"/> Drawing<br/> <input type="checkbox"/> Finish<br/> <input type="checkbox"/> Part Lost/Missing<br/> <input type="checkbox"/> Misread         </div> </div> |  |                        |  |
| Other/Details:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |                        |  |